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First Verified Observation of the Rock Leguaan (*Varanus albigularis* Daudin, 1802) in Kgalagadi Transfrontier Park, Republic of South Africa; with Notes on the Flora and Fauna

Mark K. Bayless [1], Karl H. Switak [2] and Rod W. Patterson [3]

Several accounts of the herpetofauna known to South Africa have been published (Branch, 1988, 1998; FitzSimons, 1935, 1943; Patterson, 1987; Pienaar, 1966, 1978; Pienaar et al., 1983). South Africa is a vast territory; many velds, vleis, karoos, deserts and coastal habitats lie within this subdivision of the African continent.

Kgalagadi Transfrontier Park

The Kgalagadi Transfrontier Park [KTP] is a small remnant of a once-vast true desert, which more than 200 million years ago covered much of a super-continent called Gondwanaland. Following continental separations, as a result of geologic and climatic erosion forces, the sands accumulated in the region where KTP lies now. The park is approximately 38,000 km^2 in area and is the first transfrontier park in Africa. It is named after the Kgalagadi tribe, the first bushmen to penetrate the northern Kalahari Desert some 2000 years ago. The names Kalahari, Kgalagadi and Makgadikgadi (a nearby area of extensive salt pans) all are thought to derive from the same root word, meaning "land of thirst." In 1931 the South African Kalahari Gemsbok National Park was established, followed in 1938 by its Botswanan counterpart (immediately adjacent) named the Kalahari Gemsbok Park. In April 1999 the respective presidents of South Africa and Botswana signed legislation to unify these two parks into the present Kgalagadi Transfrontier Park.

The KTP is home to many species of reptiles and amphibians (FitzSimons, 1935; Haacke, 1984; Patterson, 1987; Mills, 1989; Nussey, 1993). Other reptile species seen in the park by KHS and RWP include spiny ground agamas, *Agama aculeata*; Kalahari tree skinks, *Mabuya striata sparsa*; Namaqua sand lizards, *Pedioplanis namaquensis*; sand snakes, *Psammophis* sp.; mole snakes, *Pseudaspis cana*; and the beautiful Cape cobra, *Naja nivea*.

Rock Leguaan (*Varanus albigularis*) in KTP

Published herpetofaunal surveys of the Kalahari Gemsbok National Park (KGNP) include FitzSimons (1935), FitzSimons and Brain (1958), Haacke (1984), Mills (1989) and Nussey (1993). Haacke (1984) states in his survey of the KGNP regarding *V. albigularis*, (p. 180): "Of the varanids only *Varanus exanthematicus albigularis* occurs in the area, but has not been documented. It is rare in the KGNP with only a few sightings over the past 20 years (E. le Riche, pers. comm.) . . . ." Haacke's statement that *V. albigularis* had been reported in KGNP is based on questionable sight records, unconfirmed second-hand information. A number of years ago, the KGNP put out a pamplet (#66) titled *Reptiles and Amphibians*, which mentioned *V. albigularis* as being present in the park, but did not document this assertion. RWP and KHS have visited the KGNP/KTP since April 1983, during both extremely dry and excessively wet periods, and until the incident being reported here had never encountered a single *Varanus*. And in fact, no positive *Varanus* sightings had ever been reported in the KGNP.

We present here a sight record, the first ever accompanied by a photograph, of the rock leguaan or white-throated monitor (*Varanus albigularis*) in the Kgalagadi Transfrontier Park (KTP), fomerly KGNP. On 18 September 2000, at 1410 hours, RWP and safari partner Mr. Frank Valleé observed an adult *V. albigularis* approximately 1 m in length, walking from east to west across a dirt road immediately adjacent to the dry bed of the Auob River (Figure 1). The heavy-bodied specimen had yellow spotting on the hind legs and banded markings on

Figure 1. White-throated monitor or rock leguaan, *Varanus albigularis*, approximately 35 km SE of Mata Mata Camp, Kgalagadi Transfrontier Park, Republic of South Africa. Photograph by Rod W. Patterson.

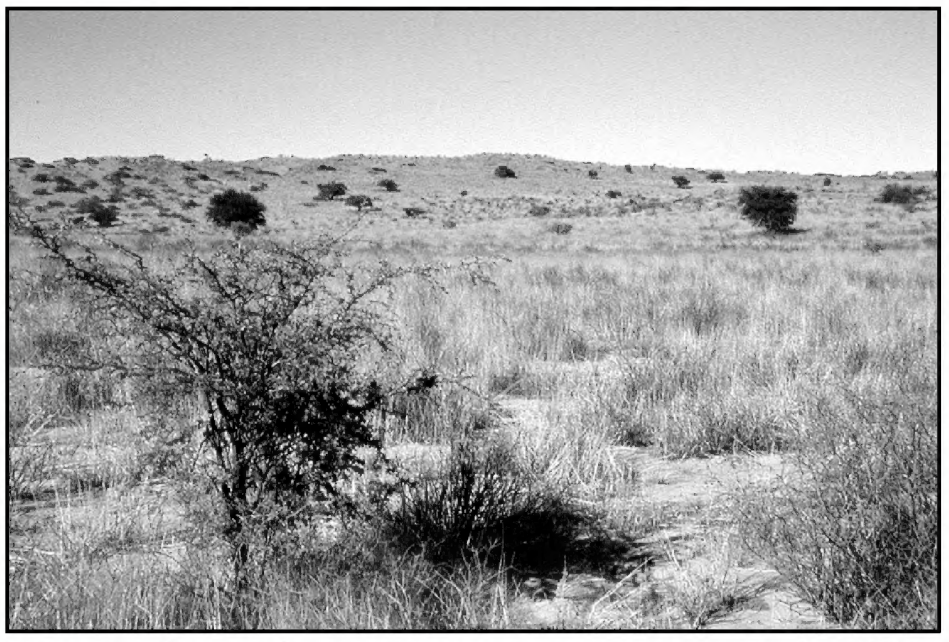

Figure 2. Kalahari Desert habitat, approximately 35 km SE of Mata Mata Camp, Kgalagadi Transfrontier Park, Republic of South Africa. Photograph by Karl H. Switak.

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the tail. The tail was intact (the authors have often observed stub-tailed specimens elsewhere); much of the body was covered with dried skin. The lizard's direction was taking it from the dry Auob River to a region of loose (reddish) sand covered by the following vegetation: dry Kalahari sour grass (*Schmidtia kalihariensis*), driedoring bushes (*Rhigozum trichotomum*) and the stately camelthorn acacia trees (*Acacia erioloba*). Following good rains in KTP, a carpet of Devil's thorn or Dubbeltjie (*Tribulus terrestris*) appears.

The large rock leguaan was observed and photographed approximately 35 km southeast of Mata Mata Camp, Kalahari Desert, Republic of South Africa (Figure 2). It was a warm and sunny day (late winter), but previous nights showed signs of rather cool temperatures. The mercury often drops below 0°C (32°F) at night during winter months in the Kalahari.

The rock leguaan (*V. albigularis*) can be found in multiple habitats in sixteen countries on the African continent (Bayless, 1997; Switak, 1988). It is a diverse, adaptable semi-arboreal animal. With many of its habitats being destroyed by human encroachment, it is important that we learn as much about it as possible, before savanna, parkland– savanna, and miombi forests become sites of human habitation and later, deserts of another kind, where wildlife is gone. . . .

The authors thank Mr. Frank Valleé for his company, "lucky" charm and potations.

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Additions to and Notes on the Herpetofauna of Veracruz, Mexico

Gonzalo Pérez-Higareda[1], Marco A. López-Luna[2], David Chiszar[3] and Hobart M. Smith[3]

Abstract

Diploglossus legnotus and *Rhadinaea macdougalli* are recorded for the first time from the state of Veracruz, and variational notes on *Abronia chiszari* and *Nerodia rhombifer werleri* are given.

Among the specimens of reptiles added over the past few years to the collection of the Estación de Biología Tropical "Los Tuxtlas" (UNAM-LT) of southern Veracruz, Mexico, are seven, representing four species, of notable distributional and/or variational novelty, as reported hereinafter.

Abronia (*Scopaeabronia*) *chiszari* Smith and Smith. Only two specimens of this rare, epiphytic, endemic lizard species of the Los Tuxtlas region have been reported. Smith and Smith (1981) described the species on the basis of one immature preserved specimen from 2.5 mi E Cuetzalapan, and Flores-Villela and Vogt (1992) reported an adult male from El Bastonal, Sierra de Santa Marta. In neither case was the color in life mentioned.

We here record two additional specimens from the rain forest on Cerro Amayaga, Municipality of Catemaco, Veracruz, 660 m, 23 September 1994. One (UNAM-LT 4057) is an adult male 147 mm total length, and the other a juvenile that was caught a few months earlier than the adult, and was briefly maintained alive by its collector, Jorge Morales Mavil, before it escaped.

In life, the superior part of the head is yellow, posterior edges of scales dark; temporals (anterior, secondary and tertiary) and postoculars white, with dark posterior edges; superciliaries and infraciliaries yellow; a prominent dark line below the infraciliaries; iris yellow; infralabials, chinshields and adjacent scales whitish (pale gray in preservative). Body yellow above, with brown, transverse, irregular bands; dorsolateral scales on body white. Venter dark gray, with or without dark spots; tail dull gray, unmarked; limbs whitish, above with irregular or diffuse spots.

The subgeneric name was proposed by Campbell and Frost (1993).

Diploglossus legnotus Campbell and Camarillo. Three male specimens (UNAM-LT 4029, 4030, 4031) measuring 89.6, 90.3 and 105.8 mm SVL respectively, are from Cerro Matlaquiahuitz, Municipality of Ixhuatlán del Café, central-western Veracruz, 1500 m, Diego Almaraz Vidal coll., July 25-27, 2000.

All features of scalation, size, and the distinctive red ventrolateral bands in live individuals agree with the original description (Campbell and Camarillo, 1994). The specimens were collected on the ground in cloud forest.

This is the first record of the species in the state of Veracruz, extending its known geographic range from the only other locality recorded, ca. 98 km SE (by air) from Tepanco de Rodríguez, Puebla.

Nerodia rhombifer werleri (Conant). Populations of this species from the swampy areas of south-central Veracruz (Lerdo de Tejada and the deltas of the Papoloapan, Blanco and Actopan rivers) usually have a yellowish gray, gray olive or olive dorsal ground color, with or without moderate or diffuse dark dorsal lines (N = 35). Two specimens from the Los Tuxtlas region of southern Veracruz (Balzapote, Montepío) have a reddish brown or greenish brown dorsal ground color, with strong dark dorsal lines.

One specimen from Sontecomapan in the Los Tuxtlas region (UNAM-LT 4059, adult male, 953 mm total length) exhibits a number of differences from the preceding specimens and from descriptions in Conant (1969), in ground color, pattern and scalation. The dorsal ground color is dark gray, with weak dark lines limited to the edges of the scales. The dorsal ground color invades one third of the ventrals on each side (as in *N. r. blanchardi*). The very dark color of the head involves the supralabials and the posterior edges of the infralabials (labials unpigmented in all other specimens examined). The dorsal scale rows are 25-23-19, rather than the usual 25-23-21 or 25-25-21. The preoculars (Figure 1) are 1-1 (usually 2-2 or 2-3, 1-1 in only one of the other specimens examined); the loreals are 2-2 (1-1 in all other specimens examined).

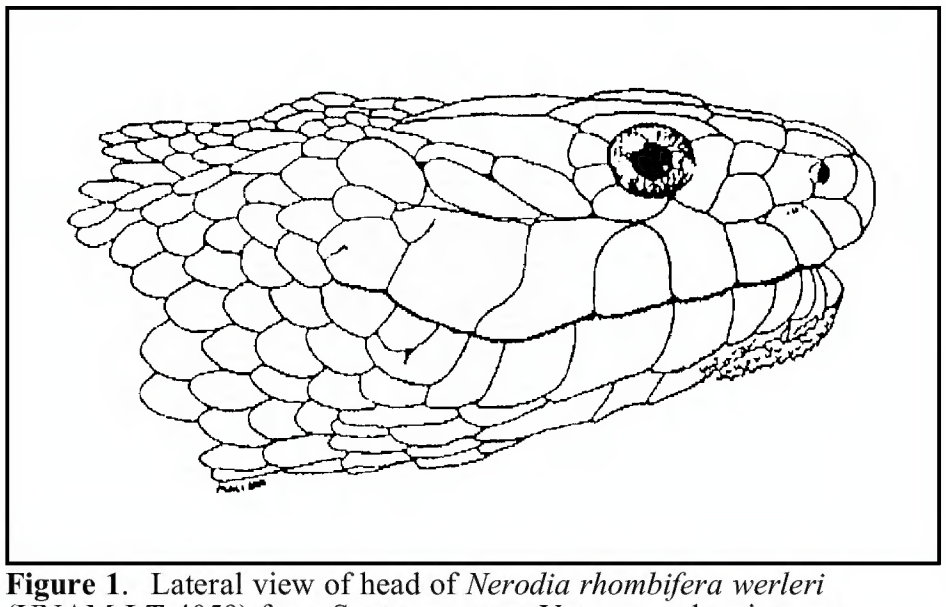

Figure 1. Lateral view of head of *Nerodia rhombifera werleri* (UNAM-LT 4059) from Sontecomapan, Veracruz, showing one preocular and two loreals.

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3. University of Colorado Museum, Boulder, Colorado 80309-0334.

Conant (loc. cit.), curiously, did not mention the number of loreals in any of the taxa of Mexican *Nerodia*, but we found 1-1 in all other specimens examined, including one *N. r. rhombifer* from Tuxpan, Veracruz.

Rhadinaea macdougalli Smith and Langebartel. An adult female (UNAM-LT 3571), 269 mm total length, is from the western slope of San Martín Tuxtla volcano, 900 m, taken by Miguel Angel de la Torre and Marco A. López-Luna 28 November 1998.

The characteristics of this specimen are within the range of variation given by Myers (1974). Scale rows 17-17-17; 127 ventrals; 56 subcaudals; anal divided; 1-1 preoculars; 1-1 subpreoculars between the 3rd and 4th supralabials; 2-2 postoculars; 1-1 loreals; 1+ 2 temporals; 8-8 supralabials, the 4th and 5th contacting the orbit; 8-8 infralabials; tail length 28.5% of total length.

Dorsum uniformly brown, except for a narrow lateral dark line atop scale row 4, starting from the neck and continuing along each side of the body and onto scale row 2 on the tail, bordered above by a white spot on each scale of row 5, forming a linear series along each side of the body and onto the proximal half of the tail. All dorsal scales on body and tail edged with dark-brown, forming a small dark spot at the tip of each vertebral scale; scales otherwise reticulated.

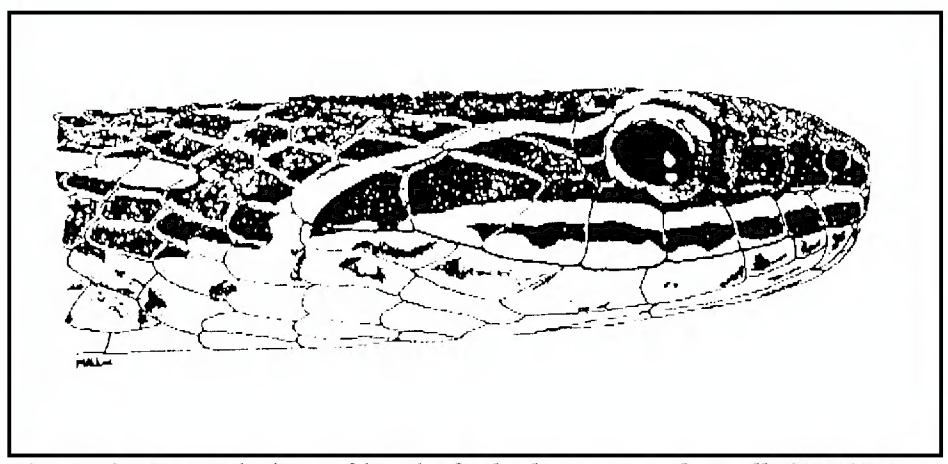

Figure 2. Lateral view of head of *Rhadinaea macdougalli* (UNAM-LT 3571) from Los Tuxtlas, Veracruz, showing white line from upper rear edge of eye to behind the last supralabial.

Ventrally reddish in life, including head and tail (yellowish in preservative); ventrals and subcaudals immaculate, except for a dark spot covering the edges of each ventral, more notable posteriorly, and scattered pigment on some subcaudals.

Head pale brown above, slightly reticulated and pigmented, laterally with a dark stripe covering the superior part of supralabials 1–7, and involving the nasal, loreal, preocular and partially the temporals (Figure 2); a light stripe surrounding the orbit; a white line starting from the edge of the supraocular and passing posteriorly through the upper postocular, along the edge of the parietal, posterior edge of the anterior temporal, the two secondary temporals and the posterior part of the eighth labial, where it unites with the light color of the throat but is separated by two scales from the white lateral line of the body. Lower edges of supralabials 3–7 white, connected on the 7th with another white line passing forward to the white rostral. Infralabials white, with small dark flecks. Head otherwise immaculate ventrally except for pigment on the mental and over the first pair of gular shields.

This record extends the known range of the species about 150 km north of the nearest other locality in Oaxaca, and is an addition to the herpetofauna of Veracruz (Pérez-Higareda and Smith, 1991).

Acknowledgments

We are grateful to M. en C. Jorge Morales Mavil of the Instituto de Neuroetología, Universidad Veracruzana, for the donation of the adult specimen of *Abronia chiszari* for the UNAM herpetological collection, and for the photographs of another immature specimen of the same species; and to Biologist Diego Almaraz Vidal for the donation of the three specimens of *Diploglossus legnotus*.

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Book Review: *Amphibian Medicine and Captive Husbandry* edited by Kevin M. Wright and Brent R. Whitaker. 2001. Malabar, FL, Krieger Publishing Company, 499 + xxv pp. $140

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Amphibians are the forgotten clade of vertebrates when it comes to veterinary medicine. All of the others—mammals, birds, reptiles and even fish—have received considerable attention in the veterinary literature. Amphibians, however, have been limited to the occasional mention in Frye's *Biomedical and Surgical Aspects of Captive Reptile Husbandry* and a single chapter in Mader's *Reptile Medicine and Surgery*. That all has changed with the publication of *Amphibian Medicine and Captive Husbandry*. This is a huge, well-referenced, well-illustrated book, and is a comprehensive summary of the subject authored by multiple experts in the field. It was long overdue.

Traditionally, amphibians haven't even warranted their own field of study, instead being lumped artificially with reptiles under herpetology. Although the evolutionary relationship between amphibians and reptiles is distant, they are studied together both because that's the way it's always been done and because their similar biology allows the use of similar techniques. Actually, birds are more closely related to crocodilians than amphibians are to reptiles. Birds and crocodilians are the only living representatives of the reptile group Archosauria. In fact, evolutionary biologists consider the class Aves to be somewhat artificial. To describe reptiles and birds as two separate but equal groups would be like characterizing the entire cat family except tigers and tigers themselves as two separate but equal groups. I for one think that if herpetologists are expected to study both reptiles and amphibians, ornithologists should have to be expert crocodilian biologists as well. When you think about it, ornithologists lack the rugged image sometimes associated with herpetologists, since much of their work is hands-off and most of their charges are small and flighty (get it?). Just compare Steve Irwin leaping on the back of a man-eating croc, or *Wild Kingdom*'s Jim Fowler wrestling a huge anaconda in a swamp, to a hands-off Marlin Perkins encouraging him from the safety of horseback 100 yards away. Wouldn't you love to see a binocular-laden bird watcher wading in after a 5-meter saltie? To return to the topic at hand, however, it should be clear that amphibians have unique husbandry and medical requirements separate from those of reptiles. Amphibian medicine and husbandry deserves individual attention, and now they have it.

In the foreword to this book, Wilbur Amand defines the problem amphibians suffer with image. "Amphibians were not high profile animals, not charismatic megavertebrates such as many mammals." While few creatures are more endearing than a grinning frog or salamander, they in fact are not nearly as popular as more traditional, cute and fuzzy domestic pets. Indeed, even herpetologists and herpetoculturists often keep reptiles to the exclusion of amphibians, or relegate amphibians to a minor role in their collection. Likewise, amphibians comprise the smallest group of animals presented to veterinarians. Even a busy exotic animal specialist is likely to see only a small number of amphibians every month. Still, amphibians deserve competent medical care. Many caring owners have valuable emotional bonds with their ectothermic pets, and many breeders have large collections with herd health issues that are important from an economic standpoint.

Amphibian Medicine and Captive Husbandry is a big textbook, measuring 22.5 × 28.5 × 4.1 cm thick (8⅞ × 11¼ × 1⅝ inches). It has 13 contributing authors and 27 chapters. The editors and major contributors are veterinarians Kevin Wright and Brent Whitaker, both with as extensive experience with amphibian medicine as anyone. Wright spent seven years as curator and veterinarian for a large amphibian (and reptile) collection at the Philadelphia Zoological Garden and is currently curator of ectotherms at the Phoenix Zoo. Whitaker is director of animal health at the National Aquarium in Baltimore, which also houses a huge amphibian collection. The remaining authors are either curators or technicians at zoological institutions; PhD scientists; or veterinarians with MS and PhD degrees or board certification in pathology, zoo animal medicine or toxicology. In short, the authors are well-qualified.

Wright and Whitaker chose a title midway between Frye's somewhat cumbersome *Biological and Surgical Aspects of Captive Reptile Husbandry* and Mader's more to-the-point *Reptile Medicine and Surgery*. I confess that the phrase "captive husbandry" sounds redundant to me, since the term husbandry refers to the raising of livestock or breeding of animals in captivity. I wonder what the alternative to "captive husbandry" would be, husbandry in the wild?

The book opens with a one-page chapter on Evolution, appropriately brief since this is not a herpetology textbook but a medical one. Taxonomy follows and while comprehensive, from a practical standpoint it focuses on commonly kept species of amphibians. Chapters on anatomy and physiology do a nice job of covering the diversity of form and function among caecilians, salamanders and anurans, and between larvae and adults. Individual exceptions to broad generalizations are pointed out as they come up. As diverse as these subjects are, I found the information to be thorough and well referenced, and illustrated with a number of nice line drawings. These may seem like basic topics, but amphibian biology is vastly different from that of other vertebrates and topics such as water homeostasis, anaerobic metabolism and calcium metabolism have important clinical significance. These chapters form a nice foundation on which expertise in clinical medicine and husbandry must be based.

Chapters on husbandry and housing, nutrition and water quality are strong points of the text. Reproduction and quarantine rate chapters of their own. The husbandry and housing chapter is outstanding, and describes in detail how to set up a variety of enclosures based on the needs of each target species. Basic, aquatic pond, aquatic stream, stream-side, terrestrial forest floor, terrestrial fossorial and arboreal enclosures are each covered, with suggestions as to which species should be housed in which environment. Alternative techniques to these

setups and both safe and unsafe materials are all listed. The instructions are practical and clear, and detailed line drawings of each enclosure make them easily duplicated. Useful tips abound, for instance it is suggested to bury a length of PVC pipe cut in half lengthwise against the side of the terrestrial fossorial enclosure. Fossorial salamanders, which normally spend most of their time hiding, will use this as a retreat yet remain visible through the side of the tank. The reproduction chapter gives a nice overview and reference list on reproductive biology, as well as a table summarizing the use of hormones to stimulate breeding in various species of amphibians. Reproductive disorders also are discussed. Another chapter covers detailed quarantine and acclimation techniques. Because the husbandry advice is based on the vast experience of two large professional exhibits as well as an extensive literature search, all the information is summarized succinctly in one place and would be of value to amphibian keepers. While much of the information in the book is beyond the scope of casual amphibian hobbyists, serious ones would benefit from owning this text.

Clinical veterinary techniques follow. Transportation, history taking, equipment, physical examination, and techniques for blood and sample collecting are discussed. Related chapters cover restraint and euthanasia, clinical microbiology and hematology. The microbiology chapter mentions collection and handling of specimens, as well as suggestions of samples likely to yield significant results for various diseases. Blood collection, analysis and interpretation, as well as tables of normal values, are presented under hematology. Diagnostic imaging is an outstanding chapter with exceptional illustrations of both radiographs (X-rays) and ultrasound images. It covers techniques and equipment in detail and has a number of well-illustrated case studies.

Disease chapters include nutritional diseases, bacterial diseases, mycoses (fungal diseases), protozoan and metazoan (worm) parasites, toxicology, trauma and idiopathic (cause unknown) syndromes. The toxicology chapter was particularly interesting to me as being thorough. In addition to the obvious insecticides that may poison amphibians, toxic plants in the enclosure consumed by food insects, herbicides, metals, salt, dissolved gasses, nicotine, ammonia and various glues used in exhibit construction all may cause clinical toxicoses. The remaining disease chapters are self explanatory, but each is comprehensive and includes an extensive reference list.

The amphibian eye rates its own chapter, perhaps because amphibian ophthalmic diseases have been well studied and special techniques and equipment are used. With this single exception, the authors chose to organize topics by disease and not by anatomical system. Thus the other major systems—cardiovascular, gastrointestinal, respiratory, urogenital, nervous, skeletal and skin, to say nothing of other special senses like the ear—are covered under general discussions of diseases, and are not awarded individual chapters. The difference between attention given the eye and other systems simply reflects the organizational style of the editors rather than a higher degree of importance for ophthalmic diseases.

The chapter on surgical techniques describes both basic techniques and individual procedures. Pharmacotherapeutics discusses various classes of drugs and lists individual dosages in an extensive table. Formulas for artificial pond water, amphibian Ringer's solution and various hyper- and hypotonic solutions are listed in additional tables.

An extensive chapter discusses amphibian neoplasms (tumors). It lists all tumors reported in amphibians and sorts them by system, so that all the urogenital tumors are reported in one section, and all the alimentary tract tumors in another. Numerous photographs depict both gross tumors and histopathology. A 12-page-long comprehensive table summarizes all the data, listing every reported tumor diagnosis, site of origin, host species and reference or contributor.

The text concludes as all of our patients do eventually, with chapters on necropsy (autopsy) techniques and pathology. Pathology of eggs is covered as well as that of larvae, metamorphs and adults. Diseases are organized by anatomical systems rather than etiology (cause).

An appendix lists all of the tables in the book and there is an index.

Forty-four color plates appear in the middle of the book, each containing five or six color photographs. The photographs are of high quality with respectable focus, contrast, color balance and cropping. The subjects are generally clear and sharp. Black and white photographs appear throughout the text, and while most are of similar high quality, a few are fuzzy or lacking in contrast. Many outstanding line drawings are used to illustrate various subjects, and this media is used more extensively and to good advantage than is found in either Frye or Mader.

One relatively minor criticism as that the order of the chapters does not seem intuitive to me, which makes location of certain topics difficult. For instance, chapters on husbandry and housing, nutrition and water quality are closely related, yet five unrelated chapters lie between the former two and the latter. The husbandry-related topics of reproduction and quarantine appear eleven chapters after the one on water quality. Diagnostic imaging, likewise, is found nine chapters after the other chapters covering clinical techniques. It seems to me that things might have been more clearly organized by dividing the chapters into three sections on biology, husbandry and medicine.

Wright and Whitaker have done an outstanding job recounting amphibian medicine and husbandry. The book is well written, well referenced and well illustrated. Although the field of amphibian medicine is advancing rapidly, this text nicely summarizes today's state of the art. Clearly *Amphibian Medicine and Captive Husbandry* belongs on the shelves of veterinarians, biologists and serious hobbyists who work with or have an interest in amphibians.

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Bull. Chicago Herp. Soc. 37(4):71-73, 2002

HerPET-POURRI

by Ellin Beltz

Loose lizards found in Hawai'i

You knew it would happen one day, but the future is now. The fourth iguana found since New Years 2002 on Oahu was discovered by the owner of two pit bulls. The dogs went crazy night after night and finally their owner saw a 4½-foot-long iguana in the yard. After what is described as a wild chase, the iguana was locked in a dog kennel and "everyone took turns looking at the largest reptile they'd ever seen, next to Godzilla." [*Honolulu Star-Bulletin*, March 7, 2002, from Ms. G. E. Chow] Not even two weeks later, a dead 16½-inch-long veiled chameleon was found in a Maui field and turned in to wildlife officials. Speculation abounds. Was the animal a solo release, or was it part of a breeding population? Other animals have been released to breed here so that their descendants could be utilized. Veiled chameleons are even more of a threat to the environment than Jackson's chameleons because the veiled eat insects, plants, small mammals and birds. [*Honolulu Advertiser*, March 19, 2002, both from Ms. G. E. Chow]

Iguanas live in a subdivision

"Thousands of scaly, spiky, orange-legged reptiles are on the loose and on the lam, breeding and eating their way through the thickets and the gardens of our little paradise. They're destroying plants, eating endangered plant species and some, the spiny tail iguanas, are devouring the eggs and hatchlings of waterfowl." It is speculated the iguanas are former pets, or the offspring of pet trade iguanas. "`They're on the golf course, at the marina, in the median strip, certainly in the botanical garden and even in the preserve,' said a spokesman for Miami-Dade Parks." More than 100 iguanas are believed to be in residence in the Fairchild Gardens alone. Joe Wasilewski, a Miami herpetologist, was quoted, "The non-native fauna now outnumber the native fauna. We've been doing fieldwork on it since 1995. It's overwhelming the number of introduced species we come across." [*Miami Herald*, February 26, 2002]

Lake Griffiths mystery continues

After four years, researchers are no closer to explaining why more than 400 gators became lethargic, acted strangely and died in Lake Griffiths since 1997. Some biologists feel that toxic algae (*Cylindrospermopsis* and *Microcystis*) found in the water are the key. It has been suggested that fish eat the algae, gators eat the fish and so the toxin—or its metabolic effect—is concentrated up the food chain. Autopsies of dead gators have revealed vitamin B ("thiamine") deficiencies and brain lesions. The biggest mystery is why Lake Griffiths, when many lakes around it are subject to similar runoff and impacts. Bass, other sport fish and birds are affected, too, but only at Lake Griffiths. The state legislature has refused to fund more studies. [*Orlando Sentinel*, December 26, 2001, from Bill Burnett]

Australian Import– Export Business

• "A parcel of deadly vipers and rattlesnakes was found in a random mail check at Melbourne's Airmail Transit Centre. The eleven young snakes, each about 45 cm long, had been wrapped in socks. The customs declaration on the package claimed it contained a ceramic vase, but a note inside warned: `Danger—venomous snakes.' The parcel had been sent from Sweden and was addressed to a person care of a bed and breakfast. . . . When the package was opened . . . two of the snakes were dead. The remaining snakes have since been destroyed because of the threat they posed to the environment. At least five of the snakes were rattlesnakes and three were vipers. After the snakes were found on March 8, Customs officers from Sydney and NSW [New South Wales] police undertook a controlled delivery of the parcel, arresting a 26-year-old . . . man who allegedly attempted to flee when taking delivery of it. . . . He has been charged with importing without authority under the Environment Protection and Biodiversity Act and faces a maximum penalty of 10 years' jail and $110,000 fine." *[Herald-Sun,* NSW, Australia, March 18, 2002, from Raymond Hoser]

• ". . . an innocent looking 68-year-old woman . . . tried to board a plane at Sydney airport on Sunday. . . . She immediately raised alarm bells. Each [of seven tubes in her luggage] had a series of holes punched through them. On high alert for terrorism, such devices register to security police like red rags to a bull. But fears turned to curiosity when it was realized they were not bombs. Inside the tubes were four deadly tiger snakes, 91 lizards and three pythons. . . . The native Australian reptiles were suspected of being bound for the black market abroad and valued up to $100,000. Into one cylinder some 44 geckos had been stuffed, as well as a rare rock knob-tailed gecko, sandstone leaf-tailed gecko and a thick-tailed gecko. The other six cylinders contained four tiger snakes, three diamond pythons and another had a further 44 geckos in it. . . . The animals were taken to Taronga Zoo where they were examined and identified. She . . . faces fines of $100,000 or ten years in jail. . . . A Taronga Zoo spokesman said the reptiles were being held at the zoo's quarantine centre." It is believed that some of the animals did not survive the ordeal. [*Herald-Sun*, NSW, Australia, March 12, 2002, from Raymond Hoser]

A tale of two toads

• *It was the best of times*: "Cane toads may be only a year away from Darwin with confirmation that the toxic invader has reached the Top End's Mary River. The discovery at the weekend of a mature toad at the Mary River ranger station upstream from Darwin in Kakadu National Park confirmed they had become established in the river catchment, [a] Frogwatch spokesman . . . said. `The toads will come down that river very quickly. . . . They may breed up there this year and then next year there'll be a lot washed down the river by the floods.' A report last year listed 157 Kakadu species that may be threatened by the toad." [*Herald-Sun*, NSW, Australia, March 20, 2002, from Raymond Hoser]

• *It was the worst of times*: After 7 years as a candidate for

ESA [U.S. Endangered Species Act] listing a coalition of conservation groups is worried that the "boreal toad could become extinct long before the Fish and Wildlife Service gets around to protecting it..." As a result the . . . [groups] have given notice that they will seek a legal remedy if the agency does not follow through on its finding that the boreal toad is "imperiled enough to warrant an ESA listing." [*GreenLines* #1587 - March 21, 2002]

How many?

The U.S. Fish and Wildlife Service added Mississippi gopher frogs to the Endangered Species List in early December, 2001, based on Biologists' estimates that only about 100 frogs are left. The frogs used to extend across the lower coastal plain from Mobile, Alabama, to the Mississippi River, but haven't been seen outside Mississippi since 1967. The only known pond is adjacent to planned development, and the article didn't say if anyone is breeding them. [*Houma, Louisiana Courier*, December 5, 2001, from Ernie Liner]

East eats West?

• "During the recent . . . season for family dinners and banquets in China, many rare animals had the good fortune to escape being served up for dinner. . . . Dedicated environmentalists and officials are now committed to spreading the news that no quarantine measures are ever taken before wild animals arrive at the dinner table. Many Chinese believe that wild animals have medicinal or pep-up properties, but experts say they are far more likely to be carriers of germs and parasites. Experts with help from the media have been organizing public dissections of wild snakes confiscated from animal smugglers by police. In this way the onlookers can see for themselves how many living parasites there are under the microscope. Quarantine officials say that wild animals are usually served up without any clear idea of where they were caught. Many of the animals are even infected with unknown diseases, which is very dangerous for diners." [*Xinhua News Service*, Beijing, China, February 22, 2002, from Wes von Papineäu]

• Now that Hong Kong residents are starting to keep dogs as pets, their use of dog meat as cuisine is declining. The rise in pet keeping in the former crown colony has resulting in a pet crematorium to take care of the beloved pet's remains after it passes this plane. In Hong Kong, the pet crematorium has handled dogs and cats as well as chickens, tortoises and lizards. Additionally the number of veterinarians has gone up from 10 to 100 in the past twenty years. [*Arkansas Democrat-Gazette*, November 23, 2001, from Bill Burnett]

Lizzy does not like them

Argentine ants were accidentally introduced into California more than 100 years ago and thrive in coastal regions, getting into homes and wiping out many larger, native, ant species. Researchers studying coastal horned lizards noticed that they prefer to eat larger, native ants rather than smaller, harder-to-catch, Argentine ants. When fed only Argentine ants in the lab, the lizards did not gain weight. [*New York Times*, March 5, 2002]

Turtle recall?

• National Public Radio broadcast a story about a conservation organization that is appealing to the Pope in an effort to stop Lenten consumption of sea turtles (as they were infallibly ruled "not meat" quite some while ago by one of his predecessors). "All Things Considered" March 27, 2002, reported that demand for sea turtle meat rises in Mexico and in areas settled by Mexican people in the United States before Easter. You can read all about it on their archives <http://www.npr.org/archives/>. [from C. Kenneth Dodd] The *Chicago Tribune* pointed out that "Penalties for turtle poaching in Mexico . . . were raised last month to 12 years from a 3-year maximum prison term." [March 15, 2002, from Ray Boldt]

• Meanwhile someone at the *Wall Street Journal* must have been listening because practically the same piece appeared in the March 29, 2002, edition. Unfortunately for the WSJ, it was headlined " . . . Turtles Considered a Lenten Delicacy, Endangered Amphibians are Lucrative Prize for Poachers." Contributor Rob Streit suggested " . . . the WSJ editorial staff are still at loggerheads over whether sea turtles are reptiles or amphibians. . . . Any suggestions out there for getting poached turtle off the menu of Lenten delicacies?" Yes, Rob. Public dissections for parasites or perhaps just tasteful TV-news segments about all the horrible diseases you can get from "bush meat."

The Plight of the Iguana

On February 26, 2002, at least two newspapers had a field day with this story. First the *Toronto Globe and Mail* reports: "A [47-year-old] woman who threw her pet iguana at a policeman was convicted yesterday of inflicting unnecessary suffering on the lizard but was permitted to keep him." She did admit damaging a window in the dispute at a Pub on the Isle of Wight. "The meter-long iguana spent yesterday at the Isle of Wight Magistrates' Court in Newport, reclining in a tank as testimony unfolded. `She was extremely drunk,' the policeman testified." Next from *The Times of London*: "It was a busy day in court for a 2-foot pet iguana. Somehow he managed to be a witness, an exhibit, a crime victim and a weapon of attack. . . . The Crown Prosecution Service had requested that Igwig the iguana should appear before magistrates on the Isle of Wight so they would have a better appreciation of the case in which his owner was accused of hurling him at a pub doorman and a policeman. So he sat peering from his glass vivarium next to the bench yesterday, munching lettuce and occasionally firing his tongue at a bowl of water, as his owner . . . was convicted. . . ." [Toronto and London from Wes von Papineäu; *Chicago Tribune* from Claus Sutor and Ray Boldt]

They're still extinct

I got an E-mail with a URL for a web site that allegedly had a picture of a plesiosaur washed up on a beach <http://members.aol.com/paluxy2/plesios.htm>. As I couldn't make heads or tails of the image, but we all know plesios are extinct, I wrote Barry Kazmer ("The Plesiosaur Page") and he replied: "February 26, 2002: It is amazing the way a basking shark decomposes and they all seem to do it this way. The one and only

one I saw was rotting in exactly this same way. It had washed up on a beach down by Ensenada in BC, Mexico. . . . The one in question was DNA tested and it is a basking shark, but the Creationists still list this on all their web sites as proof plesiosaurs are still here! Sigh!"

But their fossils live on

"In London, a professor at the University of Greenwich announced the discovery of the oldest fossilized vomit on record, barfed up by a four-flippered reptile some 160 million years ago." [News of the Weird, *Chicago Reader*, March 16, 2002, from Ray Boldt]

New species described

"Watch out for 'sand snakes' on Miami Beach. That's what . . . police call nocturnal thieves who stake out their prey on the beach at night, then slither along the sand to snatch valuables. They creep and crawl on their bellies like reptiles says [a] Detective. . . ." [*Miami Herald*, October 22, 2001, from Alan Rigerman] The bottom line is don't leave your purse on the sand when you go wade in the water or *Robbery boa* might get it.

Caiman gain' nowhere

New York Authorities wouldn't let a Florida alligator wrestler and his wife take the young caiman they pulled out of an 11-acre Central Park, New York City, pond last June. And while a lot has happened in New York since then, she's on display at the Central Park Zoo until a more permanent home can be found for her. [South Florida *Sun-Sentinel*, October 24, 2001]

Critter-traficante sentenced

"A federal court in San Francisco has sentenced Ken Liang `Anson' Wong, a notorious dealer of threatened and endangered wildlife to nearly six years in prison. . . . [He was] also ordered to pay a $60,000 fine. . . . Endangered species traded by Wong included two particularly rare reptiles, . . . the Komodo dragon, the world's largest lizard . . . [and] the plowshare or Madagascan spurred tortoise, believed by many to be the world's rarest tortoise species. . . . [His] operation was based in Malaysia; [he] pleased guilty to 40 federal felony charges and violations of the Lacey Act." He is believed to have earned about $500,000, less than $100,000 for each year he will now spend in prison. [*Focus*, World Wildlife Fund, September/October 2001, from Ray Boldt]

Depends if he's white or not

In an interesting question, the Internal Revenue Service must decide the value of white alligators before Louisiana Land and Exploration Company [LLEC] can donate their surviving white gators to New Orleans' Audubon Zoo. Several years ago, their worth was estimated around $500,000 to $700,000 each. Curiously, zoo promotion and loans of the white gators may have raised their value and the IRS is trying to determine their actual worth. They are 14 years old, weigh in the hundreds of pounds and measure around 9 to 10½ feet long [*Sunday Advocate*, Baton Rouge, LA September 23, 2001] Last year the price paid for wild caught (dead) gator was $27.00 per foot [*Houma, Louisiana Courier*, August 29, 2001]. On January 8, 2001, the *Times-Picayune* and the *Houma Courier* reported that LLEC donated twelve blue-eyed, white scaled alligators to the Audubon Zoo. The value was placed at $4 million dollars. [all the preceding from Ernie Liner and the same story in the *Albuquerque Journal*, January 9, 2002, from J. N. Stuart]

Letter of the month

Bill Burnett writes: "Here's the latest [large decorated envelope full of clippings] from Tennessee, Ohio, Florida and Arkansas. We had four to six inches of snow this week. Don't you miss the white stuff? Bill" No, and thanks for the clippings! :) Ellin

Thanks to everyone who contributed this month and to everyone who contributed to previous columns. Send more stuff! Send whole pages of newspapers or magazines (they don't weigh much and its easier than cutting them out or sticking them back together). Make sure your name is on each story and mail to: Ellin Beltz, P.O. Box 934, Ferndale, CA 95536. E-mail <ebeltz@ebeltz.net>.

Unofficial Minutes of the CHS Board Meeting, March 15, 2002

CHS President Jack Schoenfelder opened the meeting at 7:33 P.M. Board members Tom Anton, Dan Bavirsha, Greg Brim, Mike Dloogatch, Lori King and Jack Schoenfelder were present. Several of the missing board members were working on behalf of the CHS at the Chicagoland Pet Show in Arlington Heights.

Officers' Reports

Recording Secretary: Emily Forcade was unable to be present. Minutes of the previous board meeting were read by Steve Spitzer and accepted as corrected. Minutes of the current board meeting were taken by Mike Dloogatch.

Treasurer: Greg Brim distributed the treasurer's report, which included a revised report for December 2001. There was no difference in the year-end total cash, but funds were allocated differently in two categories.

Membership Secretary: Mike Dloogatch reported that membership had declined slightly from the previous month. Steve Spitzer, Greg Brim and Mike Dloogatch met prior to the board meeting to discuss changes to be made when the membership forms are reprinted.

Vice-president: Lori King reported that the Show & Tell meeting will take place in May this year. Lori also announced that the board of the International Iguana Society had added $250 to a $500 CHS donation to the Utila Island breeding project for *Ctenosaura bakeri*. This money will be used for building cages.

Standing Committees

ReptileFest: Lori told the board that Paul Sereno has a major "SuperCroc" exhibit scheduled at the Museum of Science and Industry. Paul had requested and will receive help from the CHS in the form of live crocodilians. The CHS contingent will hand out lots of ReptileFest flyers.

Shows: Lori announced that on May 6 Project Exploration's "Sisters for Science" program will be at the Harold Washington Library. They would like CHS participation. The CHS received a $300 donation from the Benson Elementary School in Itasca in thanks for a program given by Bob Bavirsha. On March 10 Ron Humbert, Steve Spitzer and families were at the Oak Park Conservatory. Also on March 10 Rich Crowley, Bob Bavirsha and Linda Malawy helped out with "Reptile Rampage" at the Lake Forest Discovery Center.

Adoptions: Linda Malawy found a home for a 16′ Burmese python at the above-mentioned Lake Forest Discovery Center.

Chicago Wilderness: Tom Anton said that at the Midwestern Ephemeral Wetlands Conference held in Chicago February 21–22 a field guide to vernal pool organisms, recently published in Massachusetts, was very impressive. Tom thought that Karen Glennemeier of Chicago Audubon might want to create a similar guide for the Chicago area under the auspices of Chicago Wilderness, and if so would welcome help from the CHS.

Ad Hoc Committees

Notebaert exhibit: Steve Spitzer reported that he, Gary Fogel, Ron Humbert and Steve Sullivan represented the CHS in a meeting with the exhibits people at the Notebaert Museum on March 3. They discussed the design of a proposed herp exhibit that would be set up during the several-week intervals between major traveling exhibits at the Notebaert.

Salamander Safari: Tom Anton reported that everything was in place for this year's safari, March 23, to meet at the Plum Creek Nature Center in Will County.

New Business

Lori King and Jack Schoenfelder received an E-mail from Karen Glennemeier, in which she discussed a Chicago Wilderness grant that she hoped to apply for, along with several other co-participants. The grant would be for a project to organize and make available as much data as possible from past years' frog-calling surveys. Karen asked if the CHS would cosponsor the project and perhaps even administer the grant, if received. The board felt this to be a worthy project, but the consensus was that, especially on such short notice, we might not be ready to take such an active role.

Bob Bavirsha showed the board a donation jar he had created, to be used to solicit donations to be used solely for the CHS Grants Program. Lori King then moved to designate that the previously mentioned $300 donation to the CHS in thanks for one of Bob's programs be dedicated to the Grants Program. Tom Anton seconded the motion. After some discussion of accounting procedures, the motion was defeated 3–2.

Round Table

Steve Spitzer told the board how very much he appreciated his Lifetime Merit Award.

Bob Bavirsha urged everyone present to use a personal approach to enlist the help of other members at this year's ReptileFest.

Jack Schoenfelder expressed thanks for the cards he received upon the death of his father.

The meeting adjourned at 8:55 P.M.

Respectfully submitted by Mike Dloogatch for Recording Secretary Emily Forcade

Herpetology 2002

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

MASSACHUSETTS SPOTTED TURTLES

J. C. Milam and S. M. Melvin [2001, J. Herpetology 35(3): 418-427] estimated population densities, home ranges, habitat use, and seasonal movement patterns of spotted turtles (*Clemmys guttata*), at two sites in central Massachusetts by radio-tracking 26 individuals between late March and December 1993 to 1995. They estimated densities of 0.2 and 1.4 adults per ha. Most turtles exhibited a seasonal pattern of emergence from overwintering sites, overland travel to seasonal pools, female nesting excursions, overland travel to estivation sites, and overland travel to overwintering sites. Mean home range area was 3.5 ha (range 0.2–34.4 ha), home range length was 313 m (range = 115–1125 m), and maximum distance traveled from hibernacula averaged 265 m (range = 75–1025 m). Home range areas were smaller in two years with below normal precipitation levels than in a wet year. Home range characteristics did not differ between sites or sexes. Home range areas and lengths were generally larger than those reported from other studies of spotted turtles, likely because turtles were radio-tracked for longer periods and all movements were included in the analysis. Use of seasonal pools was greater than availability at both sites. Twenty-five of 26 turtles spent 20–150 cumulative days per year ($\bar{x}$ = 80) foraging, basking, and mating in seasonal pools. Although use of upland habitat was less than availability, overall use was substantial: 20 of 26 turtles estivated for periods of 2–93 days per year ($\bar{x}$ = 30) in upland habitats ≤ 412 m from permanent wetlands and 10 of 12 females nested in fields 75–312 m from permanent wetlands. Twenty-four of 26 turtles nested or estivated well outside the 30- and 60-m wide upland buffers protected under Massachusetts' Wetlands Protection Act. Protection of complexes of seasonal pools and permanent wetlands bordered by substantially larger areas of upland habitat will be necessary if viable populations of spotted turtles are to be protected.

SAND SNAKE VARIATION AND TAXONOMY

L. L. Grismer et al. [2002, Herpetologica 58(1):18-31] reevaluated geographic variation and taxonomy in the colubrid genus *Chilomeniscus*. Color pattern, head scale morphology, and scale and band counts were used in an attempt to differentiate the four currently recognized species: the unbanded *C. stramineus*, banded *C. cinctus*, and the banded insular forms *C. punctatissimus* and *C. savagei*. Because only head scale morphology could be used to discretely diagnose (i.e., no character state overlap) two of the four species, the authors propose that the current evidence supports the recognition of *C. savagei* from Isla Cerralvo and two disjunct populations of *C. stramineus*, one ranging throughout the Baja California peninsula and the other occurring in Arizona, U.S.A., and Sonora and Sinaloa, Mexico. The authors consider *C. cinctus* and *C. punctatissimus* to be junior synonyms of *C. stramineus*.

BLOOD-SQUIRTING IN HORNED LIZARDS

W. C. Sherbrooke and G. A. Middendorf III [2001, Copeia (4):1114-1122] reviewed from the literature variability within the genus *Phrynosoma* in the occurrence of ocular-sinus blood-squirting, reportedly a defense used in canid encounters. Six species have been reported to squirt blood, and seven species remain unreported. Five of the latter species were tested in dog trials; one exhibited bloodsquirting (*Phrynosoma hernandesi*), one exhibited precursor behaviors but failed to squirt blood (*P. ditmarsi*), and three yielded negative results (*P. mcallii*, *P. modestum* and *P. platyrhinos*). Instances of blood-squirting in response to human encounters were collected and largely support the negative results for the three species *P. mcallii*, *P. modestum* and *P. platyrhinos*. A phylogeny of blood-squirting and nonblood-squirting species is presented with blood-squirting being plesiomorphic in the genus and the synapomorphic condition of nonsquirting species being restricted to a single clade of *P. mcallii–modestum–platyrhinos*. The possibility of *P. douglasii* independently evolving an autapomorphic condition remains unresolved. Dog trials with 40 adult *P. cornutum* were conducted to determine influences of body size and sex on squirt frequency and blood mass expelled, as well as to examine aspects of the potential physiological cost of the defense. In 153 trials, 85% of all lizards squirted in at least one trial, 82% squirted in more than one trial, and two lizards squirted daily over the seven-day trial period. Initial body mass positively correlated with the total number of squirts/individual (r^2 = 0.28; P < 0.001) and the number of days a lizard continued squirting (r^2 = 0.63; P < 0.01). Number of squirts/individual/day declined over the seven-day trial period (r^2 = 0.20; P < 0.05). Cumulative mass loss for individual lizards attributable to blood-squirting averaged 0.7 ± 0.8 g (2.0 ± 2.0% body mass), with a high of 2.8 g (6.8% body mass). In addition, juvenile *P. cornutum* and *P. hernandesi* were shown to squirt blood in dog trials, illustrating the early developmental onset of the behavior.

TWIG SNAKES IN EASTERN AFRICA

D. G. Broadley [2001, African J. Herpetology 50(2):53-70] reviews the populations of twig snakes, genus *Thelotornis*, in eastern Africa. *Thelotornis kirtlandii* extends east of the Albertine rift to Uganda and the Imatong Mountains in southern Sudan, but in Tanzania it is only represented by a few relict populations in montane forests, surrounded by *T. mossambicanus* (Bocage) in the savanna. The latter taxon is recognized as a good evolutionary species, as it is sympatric with *T. capensis oatesii* (Günther) in Mutare District on the eastern escarpment of Zimbabwe. He describes a new species, *Thelotornis usambaricus*, intermediate between *T. kirtlandii* and *T. mossambicanus*, from coastal forests in northeastern Tanzania.

WOOD FROG IN SOUTHERN ILLINOIS

M. Redmer [2002, Illinois Natural History Survey Bulletin 36(4):163-194] studied several aspects of the natural history of the wood frog (*Rana sylvatica*) in the Shawnee National Forest in southern Illinois. This species was documented from 20 localities in five counties (Jackson, Hardin, Pope, Saline, and Union) in the Shawnee Hills and Ozark Natural Divisions. Despite searches, none were found in the central Shawnee Hills (i.e., Johnson, Williamson, Massac or Pulaski Counties) or the Cretaceous Hills in the extreme southeast tip of the state (Pope and Massac Counties). Eggs or tadpoles were observed in 30 aquatic breeding sites, including ephemeral ponds and depressions, semi-permanent ponds, human-made ponds, roadside ditches, and ruts (caused by vehicles) in dirt trails. Fifteen other species of amphibians were found to share at least one or more breeding ponds used by *R. sylvatica*. Surrounding habitat included floodplain and upland deciduous, coniferous, and mixed deciduous/coniferous forests. One population, which bred in at least 13 ponds or flooded depressions in southern Jackson County, was studied more intensively between 1993 and 1997. Explosive breeding took place in this population in late winter (February or March) and coincided with surface soil temperatures of 9°C, and less so with warm rains and specific air temperatures. Skeletochronologically estimated age of breeding adults was compared to snout–vent length (SVL) and fecundity. There was moderate positive correlation between age and SVL both for males and for females. There were no correlations between ages and SVLs of amplexed mates. Clutch size was more strongly correlated to female SVL than to female age, and mean ovum diameter was negatively correlated to clutch size.

WHY DO GECKOS GROUP?

M. Kearney et al. [2001, Herpetologica 57(4):411-422] note that reptiles of many species are often found in aggregations within retreat sites, but there is little quantitative information on the size and composition of such aggregations. Such data may clarify the processes that stimulate aggregation, and that determine patterns of co-occurrence of individuals with respect to sex and body size. The authors gathered data on diurnal aggregations (under rocks) of two species of nocturnally-active gekkonid lizards (the gekkonine *Christinus marmoratus* and the diplodactyline *Nephrurus milii*) from two widely-separated localities in southern Australia (central Victoria and an island off the southern coast of Western Australia). Both species occurred at these localities, but geographic variation was evident in mean adult body sizes and in sexual size dimorphism. Both species actively aggregated, and the composition of groups differed significantly from that expected under a model of random assortment. For example, adult females of *N. milii* were rarely found with juvenile conspecifics, whereas pairs of juveniles were common. Most groups of *C. marmoratus* contained only a single adult male. In *N. milii*, members of an aggregation tended to resemble each other in body size. These significantly non-random patterns within aggregations of gekkonid lizards are suggestive of the kinds of processes that determine group size and composition, but experimental studies are needed to verify the causal factors involved.

SAVANNAH MONITORS AND CHEMICAL CUES

W. E. Cooper, Jr., and J. J. Habegger [2001, J. Herpetology 35(4):618-624] note that varanid lizards often tongue-flick in feeding and social contexts, but little is known regarding their abilities to identify a variety of prey using only chemical cues or to detect pheromones. They studied responses by juvenile savannah monitors, *Varanus exanthematicus*, to surface chemical stimuli from several animal taxa, two plant species palatable to herbivorous lizards, and conspecifics, using diluted cologne and deionized water as pungency and odorless controls. In 60-sec trials with stimuli presented on cotton swabs, lizards showed stronger responses to prey stimuli from mouse, cricket, earthworm, and a gekkonid lizard than to control stimuli. These findings suggest that the lizards are able to locate and identify prey from a wide variety of taxa, which would be adaptive for a generalist predator. Only mouse and cricket stimuli induced a greater proportion of individuals to bite swabs than control stimuli. Because these prey were the laboratory diet, biting frequency may depend on familiarity with the prey. Like other tested insectivores and carnivores, *V. exanthematicus* showed no signs of discriminative responses to plant chemicals. The lizards tongue-flicked in response to conspecific cues at a higher rate than to the odorless control but at a lower rate than to cues from a gekkonid lizard, indicating that conspecific cues were detected and discriminated from prey cues.

SEA KRAIT ACTIVITY

S. Shetty and R. Shine [2002, Copeia (1):77-85] note that yellow-lipped sea kraits (*Laticauda colubrina*) are large (to 1.5 m, 2 kg) amphibious sea-snakes that forage for eels in tropical oceans but return to land to digest their prey, slough their skins, mate and lay eggs. During three-month field seasons in two successive years, the authors quantified various aspects of the behavior of sea kraits on a small island off the coast of Viti Levu, Fiji. Radiotransmitters were surgically implanted in 16 snakes, and regular surveys were conducted to quantify the times and places of various activities by nontelemetered snakes. The radio-tracked snakes spent equal amounts of time on land versus in the ocean, moving between these two habitats about once every 10 days. Their mean duration of time on land fits well with the time required for sloughing and digestion, as measured in outdoor enclosures. These snakes maintained relatively high and constant body temperatures both while on land and in the water; the only overt thermoregulation involved shade seeking. Different age and sex groups were active in different places and at different times of day. For example, juvenile sea kraits rarely ventured far from water, whereas adults often moved well inland. The snakes moved about at night, engaged in courtship during the morning and were inactive during the afternoon. Thus, snakes were frequently found in courting groups during the morning, but most were solitary at night. Movements between land and sea generally occurred at night on gently sloping areas; movements of adult male snakes also were affected by tidal conditions and by the presence of females. Male sea kraits move about more frequently and actively on land than do females, in keeping with sex differences in locomotor performance.

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, $.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutrtionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, $.17 each; fuzzies, $.24 each; hoppers, $.30 each; weanling, $.42; adult, $.48. Rats: starting with pinks at $.45 each, to XL at $1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. P.O. Box 85, Alpine TX 79831. Call us **toll-free** at (800) 720-0076 or visit our website: http://www.themousefactory.com.

For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at $20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

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For sale: books—collector's items. *Snakes of Southern Africa* by Vivian F. M. FitzSimons, 1962, "original" copy, not a reprint, hardbound/dj, 423 pp., like new, $395; *FitzSimons' Snakes of Southern Africa*, as previous, but 1983 revised edition edited by Donald G. Broadley, updated bibliography, like new, $150; *Reptiles and Amphibians of Australia* by Harold G. Cogger, 1983, hardbound/DJ, frilled lizard on DJ, like new, $55; herpetology of Chile, a 2-volume set (in Spanish): *Batracios de Chile* by José Miguel Cei, 1962, 128 pp. + 18 pp. of maps, 36 pp. line drawings, 24 pp. b&w photos, 11 color plates, extensive bibliography, hardbound/DJ, like new; *Reptiles de Chile* by Roberto Donoso-Barros, 1966, 458 pp., hardbound/DJ, 24 pp. excellent line drawings, 80 pp. b&w photos, 32 pp. color plates, extensive bibliography, like new, **both** volumes at $150; *Hylid Frogs of Middle America* by William F. Duellman, 1970, original work, 2 vols., hardbound, like new, $250; *Living Mammals of the World* by Ivan T. Sanderson, 1967, 303 pp., hardbound/DJ, extensive color photography, like new, $25; *Living Birds of the World* by E. Thomas Gillard, 1967, 400 pp., profusely illustrated in color, hardbound/DJ, like new, $25. Last two books are from the Doubleday "Living" series. To make sure items are still available either call (707) 538-7412 or fax (707) 538-0554. Karl H. Switak, 6377 Stone Bridge Road, Santa Rosa CA 95409.

For sale: herp books. *Handbook of Lizards* by Hobart M. Smith, 1946, 557 pp., 124 b&w plates, 41 maps, no DJ, bookplate and signature of former owner, author's name lettered across edge of bottom pages, hardbound, $45; *Reptiles of North Carolina* by C. S. Brimley, 1944 reprint of material from *Carolina Tips*, 1941–43, 35 pp., flexible cardboard covers, $20; *The Anoline Lizards of Bimini, Bahamas* by James A. Oliver, 1948, 2 figs., 2 tables, Amer. Mus. Novitates No. 1383, softbound, $12; *An Annotated Key to the Amphibians and Reptiles of Sind and Las Bela, West Pakistan* by Sherman A. Minton, Jr., 1962, 60 pp., 58 b&w photos, 14 drawings, Amer. Mus. Novitates No. 2081, softbound, $20; *The Herpetology of Nepal: A History, Check List and Zoogeographical Analysis of the Herpetofauna* by Lawrence Swan and Alan Leviton, 1962, pp. 103-147, 4 figs., 3 tables, stain on back cover, ink fingerprint on pp. 136 & 140, softbound, $18. All books are in excellent condition unless otherwise indicated. Postage $2.50 for orders under $25, free for orders $25 and over. William R. Turner, 6838 S. Ivy St., Apt. 302, Englewood CO 80112, (720) 493-9378, E-mail: turnerbmrk@prodigy.net.

For sale: Inland bearded dragons, *Pogona vitticeps*, available now. And more eggs hatching! Red/gold phase for $60 each or 2 for $100. For details contact Rich Crowley at pogona31@netscape.net or if local call (708) 485-5705.

For sale: 3-year-old c.b. female bearded dragon, $50; one male and two female c.b. leopard geckos, $100/trio; c.b. crested geckos, $30–40 (depending on size/age); three adult male crested geckos, $50 each; one male and one female c.b. red albino corn snakes, $100/pair; two c.b. female red albino corn snakes, $40 each. John Cebula, (630) 858-3767, E-mail: johncebula@aol.com.

For sale: Adult female Durango mountain kingsnake (*Lampropeltis mexicana greeri*), medium gray with wide brick-orange saddles, proven breeder, $50. Chicago area pick up only. Mark Dieterich, (847) 570-0239, E-mail: mdubitable@aol.com.

For sale: **Now accepting reservations for 2002 rare/unusual garters**: We expect offspring to be available in June or July. **Easterns**: Blais flames, $50–125 each; Blais speckled flames, $125 each; Blais peach flames, $50 each; erythristic easterns (high red) $50–100 each; double het (erythristic × melanistic eastern), $175/pair; double het (erythristic × Blais flame), $175/pair; melanistic eastern, $35 each; Florida Blue, $10–50. **Plains**: Snow plains (2 strains), $300 each, hets, $150 each; Albino plains (2 strains), $125 each, hets, $50; anerythristic plains (2 strains), $75 each, hets, $40 each, possible het plains (66%), $35 each; normal plains, $25 each / 2 for $40. **Red-sideds**: Albino red-sideds (very limited numbers), $350 each, 66% possible het, $100 each, 50% possible het, $75 each; anerythristic red-sided, $100 each, hets, $50, possible hets, $35 each; normal red-sideds $25 each / 2 for $40. **Wandering:** Het albino wandering, $75 each; normal wandering, $25 each / 2 for $40. Shipping is extra. Questions, call Scott at (919) 365-6120 EST, E-mail: SFelzersgarters@aol.com, web address: www.thamnophis.com/features/ScottFelzer/. [NC]

For sale: Green anacondas, c.b. 9/01, beautiful, healthy and DOCILE, $175 each; yellow anacondas, c.b. 6/01, flawless little screamers, $95 each; Amazon tree boas, c.b. 7/01, solid yellow, $125, orange and green, $150, both are female; 11' female tiger retic, stunning specimen, tame and a great feeder, $550 or best offer; jungle carpet pythons from nice black and yellow parents, $100 each or $175/pair. Mark Petros, Strictly Serpents, (847) 836-9426, E-mail: MLPserpent@hotmail.com.

Herp tours: Adventure trips to **Madagascar**! Journey somewhere truly unique to seek and photograph nature on the world's least-studied mini-continent. For maximum herp fun and discovery, join Bill Love as we go where few people will ever venture in their lives. Let his experience assure a comfortable tour finding the most colorful and bizarre species on the planet! Get all the details at Blue Chameleon Ventures' comprehensive new website: <http://www.bluechameleon.org>, E-mail: bill@bluechameleon.org, or call (941) 728-2390.

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Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: <MADadder0@aol.com>.

HERP-ACROSTIC #18 *by Mike Dloogatch*

1 H	2 G	3 A	4 I	5 D		6 Z_1	7 H		8 U	9 B	10 K	11 R	12 Z_1	13 V	14 A		15 Y	16 M	17 Z	18 D	19 L	20 W	21 G	22 O
23 P	24 Z_1		25 Q	26 R	27 A	28 M	29 B		30 W	31 J	32 T	33 U	34 H	35 N	36 E		37 I	38 Z_1	39 C		40 W	41 L	42 Z_1	43 G
44 F	45 D	46 B	47 H		48 K	49 G	50 T	51 X		52 G	53 Y	54 W	55 H	56 Z	57 R	58 B	59 N	60 Z_1	61 E	62 P	63 O	64 D		65 D
66 G	67 B	68 I	69 H	70 W		71 Z_1	72 L		73 Y	74 X	75 H		76 Z_1	77 T	78 W	79 G	80 I	81 A	82 B	83 S	84 H	85 O		86 Z_1
87 R	88 H	89 I	90 S	91 A		92 U	93 I	94 L	95 Z	96 Y	97 H		98 C	99 Z_1	100 U	101 T		102 G	103 R	104 I	105 E	106 V	107 B	108 J
	109 Y	110 Q	111 Z_1	112 F	113 W	114 Z	115 G	116 X	117 V	118 O	119 B		120 P	121 Z_1	122 U		123 G	124 R	125 M	126 Q	127 B	128 P	129 K	130 L
131 V		132 Z_1	133 W	134 S		135 D	136 H	137 J		138 A	139 G	140 H	141 Y	142 K	143 U	144 I	145 B	146 W	147 R		148 N	149 M	150 T	151 Z_1
152 X	153 Z	154 I		155 K	156 J	157 A	158 S	159 C	160 N	161 Y	162 L	163 W	164 H	165 U		166 O	167 Z_1	168 E	169 H		170 R	171 Z_1	172 P	173 G
	174 Z_1	175 H		176 A	177 D	178 Z	179 H	180 G		181 W	182 Z_1	183 I		184 X	185 F	186 H	187 Y	188 L	189 O	190 Z_1	191 C	192 W	193 B	
194 Y	195 Z_1	196 Q	197 M	198 V	199 W	200 J	201 T	202 I		203 Y	204 Z_1		205 W	206 F	207 A	208 U	209 H	210 K	211 R	212 Y	213 Q	214 J	215 S	216 G
217 E		218 Z_1	219 H	220 K		221 I	222 C	223 D	224 H		225 H	226 Z		227 P	228 A	229 T		230 X	231 F	232 R	233 S	234 G	235 Z	236 W

How to solve this puzzle: The diagram, when filled in, will contain a quotation from a published work on herpetology. The numbered squares in the diagram correspond to the numbered blanks under the WORDS. The letter at the upper right of each square indicates the WORD containing the letter to be entered in that square. The WORDS form an acrostic: taking the first letter of each in order spells out the name of the author and the title of the work from which the quotation is taken.

CLUES

WORDS

A. _____ cat snake: *Boiga cynodon* (hyphenated).
207 27 14 157 228 176 81 138 3
91

B. Captive mating of a snow corn with a wild-caught corn snake, for example.
9 107 29 193 67 127 145 58 82
119 46

C. _____ sirens: genus *Pseudotriton*.
39 98 222 159 191

D. Indigo, for example.
135 223 5 64 18 45 177 65

E. Desert in which one might expect to find *Testudo werneri*.
61 105 217 36 168

F. Snow leopard.
44 231 206 185 112

G. Sister taxon to the Squamata in some modern classification schemes.
180 2 139 216 102 173 66 123 79
52 43 49 234 21 115

H. First English-language book on reptiles, written by Edward Topsell and published in 1608 (four words).
164 47 179 219 84 7 1 225 136
186 69 175 55 224 75 209 140
169 34 88 97

I. Author of *Snakes: The Evolution of Mystery in Nature* (full name and middle initial).
89 37 104 154 202 221 68 4 183
93 80 144

J. "I once experimented with LSD," Tom said _____.
156 31 200 214 108 137

K. Field equipment for a biologist studying bats (two words).
48 129 210 142 155 220 10

L. St. Louis Zoo Curator of Reptiles (last name only).
19 72 130 41 162 188 94

M. Gin is one variety.
125 28 197 149 16

N. Name used in Venezuela for *Podocnemis sextuberculata*.
59 160 35 148

O. One of the three Greek Fates; her name was formerly applied to the genus now called *Bitis*.
85 63 118 189 166 22

P. Asian adder.
120 227 62 172 23 128

Q. Desert in which one might expect to find diurnal geckos of the genus *Rhoptropus*.
213 25 196 126 110

R. Common English name for a Neotropical pitviper belonging to a genus named for a sister of Word O.
26 124 57 11 170 103 147 211 87
232

S. In *The Fugitive Kind* Brando's character was known for his snakeskin _____.
90 158 233 83 215 134

T. Breeders' term for a tyrosinase-positive albino ball python.
229 150 50 201 101 32 77

U. Gas bubble disease in amphibians is much like _____ in humans (two words).
100 143 33 92 208 8 122 165
198 13 117 106 131

V. Make one; consolidate.
113 205 236 30 78 40 199 70 54

W. *Testudo horsfieldii*, as it is sometimes known in the pet trade (two words).
20 181 133 192 163 146
230 152 116 74 51 184

X. The _____ Sea separated Laurasia from Gondwanaland during the early Mesozoic.
161 212 194 187 15 109 96 203 73
141 53

Y. *Varanus varius* (two words).
235 178 226 153 17 95 114 56

Z. Gushing.
111 86 6 174 182 24 60 204 71

Z_1. Spencer Fullerton Baird was its secretary, 1878–1887 (two words).
167 132 12 121 76 151 99 42
171 218 190 195 38

SALAMANDER SAFARI REPORT

On Saturday, March 23, forty "temperature hardy" CHS members, along with a few guests and frog monitoring volunteers braved temperatures in the low 40s and still enjoyed our annual CHS Salamander Safari.

Our host this year was the Forest Preserve District of Will County and they couldn't have been more accommodating. They allowed us the use of their Plum Creek Nature Center in Beecher, Illinois. This newly reconstructed facility is outstanding in its design and layout with endless visitor-friendly features available.

A long row of tables in a large naturally lighted study room was soon covered with over 30 live species of local as well as exotic amphibians brought in by members just for this outing. Our hosts even set out all of their many amphibian-related books and pamphlets for our use.

In addition to the usual contingent of Chicagoland frogs and salamanders, we also had live examples of the ringed salamander, *Ambystoma annulatum*, gray tiger salamander, *A. tigrinum diaboli*, crawfish frog, *Rana areolata*, European green toad, *Bufo viridis*, and rococo toad, *B. paracnemis*. Thanks to all who brought in their live specimens for others to enjoy and photograph.

The outdoor activities, considering the winterlike temps of the previous two days netted better than expected results. When we rolled those first few logs and found ice crystals along the ground surfaces, we all thought of the hot coffee and doughnuts back at the nature center. By 11:00 A.M., however, temperatures started to approach 50°F and in small numbers we began finding what we had hoped to see. A few people found examples of the blue-spotted salamander, *Ambystoma laterale*, and Dave Mauger, Preserve Manager of Will County FPD, working a vernal pond, netted a large eastern tiger salamander, *A. t. tigrinum*, along with several egg masses of that species. As temps climbed, the western chorus frogs, *Pseudacris t. triseriata*, began calling and someone soon found one of these earliest of all springtime active frogs.

Forty sets of eyes cover a lot of ground and we shortly had examples of bullfrogs, *Rana catesbeiana*, gray treefrogs, *Hyla versicolor*, and tadpoles of the green frog, *R. clamitans*, which were added to the count. Thanks to an abundance of sunshine, even a few cold-resistant garter snakes showed up.

Had the weather been more typical of late March, we would have found more species and numbers of herps to report to the Will County Forest Preserve District.

Historically, this CHS-sanctioned field trip has experienced extreme weather variables, common at this time of year. In some years we've enjoyed T-shirt 70° temps; in others we've slid across ice covered breeding ponds. That's late March – early April in Chicagoland and we still look forward to getting out each spring regardless of the weather, in hopes of seeing the "spring awakening" of our local amphibians.

Thanks to all who attended and with special thanks to Dave Mauger, Bob Bryerton, Facility Coordinator of Plum Creek Nature Center, and Naturalist Debby Krohn, who outdid themselves on our behalf.

Tom Anton and Ron Humbert, Event Coordinators

IN MEMORIAM

Former CHS member Bryant Capiz, born February 14, 1968, died on January 25, 2002. Bryant grew up on the north side of Chicago and joined the CHS at age 13. Throughout the 1980s, Bryant was very active in CHS and his love for herps branched out into arachnids. In 1991, he opened his pet store, Arachnocentric, which remained open until he moved to southern Illinois in 1999. Bryant maintained Arachnocentric as a mail order business until the time of his death with the help of his fiance, Kat Daniels. He is survived by his mother and father (Jan and Raymond Capiz), fiance (Kat Daniels) and brother (Steve Capiz). Bryant was a very knowledgeable and personable herp and arachnid enthusiast. He was loved by many and will be greatly missed.

Chicago Wilderness Great Herp Searches

Sponsored by the Habitat Project of Audubon-Chicago Region

Come spend an afternoon looking for snakes, lizards, turtles, salamanders, frogs, and toads—anything that slithers, crawls, or hops! These Great Herp Searches will help land managers learn where the reptiles and amphibians are in each county. Since these animals are so hard to find, we don't know very much about where they are and how they are doing.

A dozen citizen scientists can gather a great deal of information in one afternoon. Experienced monitors and herpetologists will join us, to provide training in search techniques and species identification. This is a great way to expand your skills at reptile and amphibian monitoring, while collecting data that land managers need and meeting other citizen scientists.

If you have field experience with amphibians or reptiles, your participation would be especially appreciated. We need your experience to help train and mentor the newer monitors. Having an individual mentor is the best way to increase one's field skills, so you'll be helping to expand the size and effectiveness of our region's corps of herp monitors.

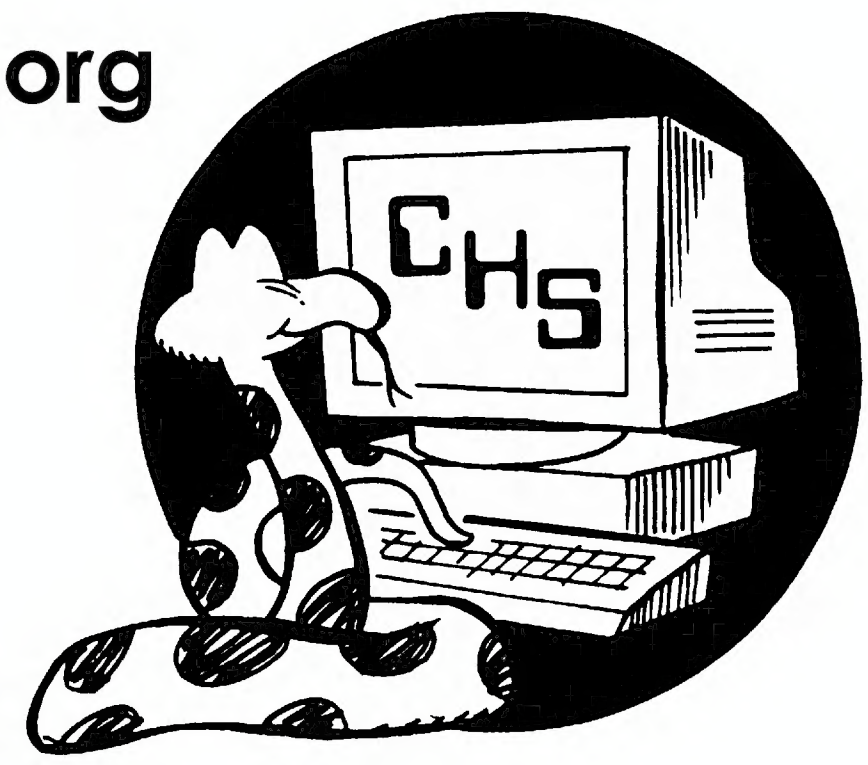
Where and When:

April 13, 1:00 to 4:00 — Nelson Lake Marsh, Kane County
April 27, 9:00 to noon — Lower Plum Creek Preserves, Will County
April 27, noon to 3:00 — Wadsworth Savanna, Lake County
May 18, noon to 3:00 — Ethel Woods, Lake County
May 25, 1:00 to 4:00 — Nelson Lake Marsh, Kane County
June 1, 9:00 to noon — Wadsworth Savanna, Lake County
June 8, 9:00 to noon — Lower Plum Creek Preserves, Will County

Contact Karen for more information: (847) 965-1150 or kglennemeier@audubon.org.

Next time you surf the WorldWide Web, crawl, run, slither, slide, jump, or hop over to the CHS web site!

www.chicagoherp.org



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- **Much, much more!**

Chicagoherp.org is accepting applications for banner advertisements or links from herpetoculturists and manufacturers of herp-related products. Visit the site and contact the webmaster for details on how you can sponsor CHS!

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, April 24, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Karen Becker, D.V.M.**, will speak about holistic approaches to herp medicine.

Our always popular annual **Show & Tell** meeting is set for May 29. All members are encouraged to bring a favorite animal and to be prepared to come up on stage and tell us something about the animals they have brought.

The regular monthly meetings of the Chicago Herpetological Society now take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Note: Because of some urgent health problems that developed suddenly, Don Wheeler was unable to attend the March meeting of the CHS and give his scheduled slide presentation, "Tales from the Golden Age of Rattlesnake Hunting." Don sends his regrets and apologizes for any inconvenience this may have caused. We will reschedule this program as soon as Don is able to make it.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the May 17 board meeting, to be held at the North Park Village Administration Building, 5801 North Pulaski Road, Chicago. To get there take the Edens Expressway, I-94, and exit at Peterson eastbound. Go a mile east to Pulaski, turn right and go south to the first traffic light. Turn left at the light into the North Park Village complex. At the entrance is a stop sign and a guardhouse. When you come to a second stop sign, the administration building is the large building ahead and to your left. There is a free parking lot behind the building.

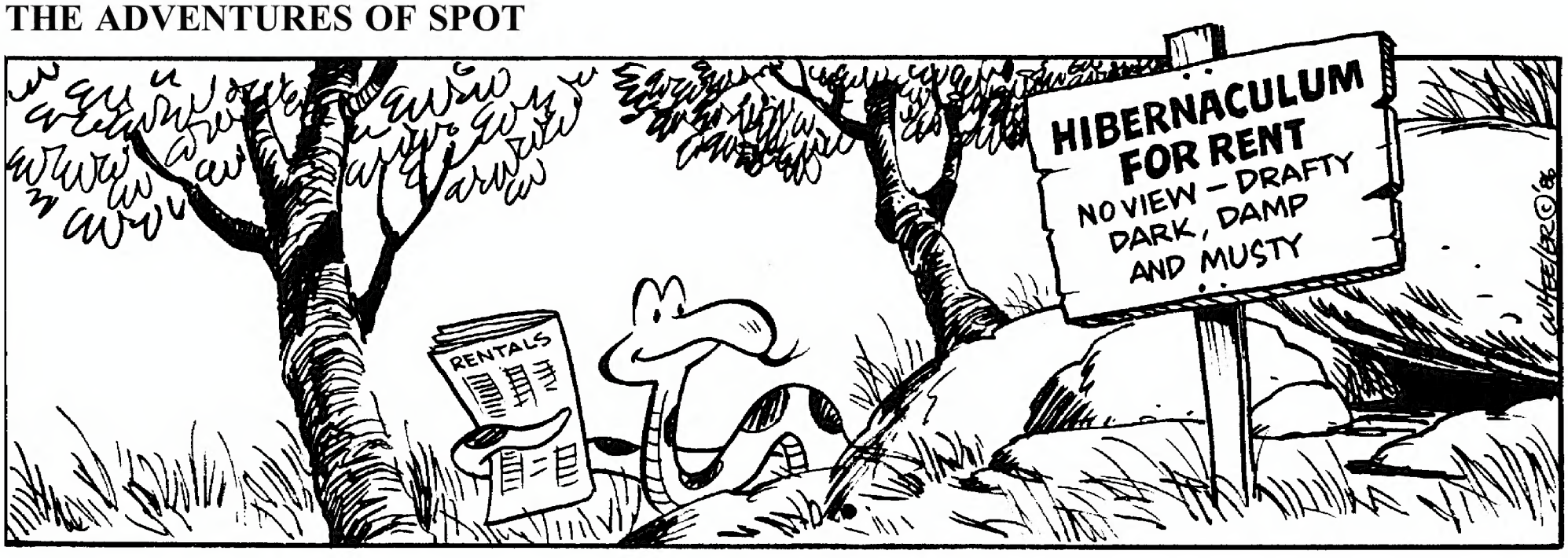
The Chicago Turtle Club

The next meeting of the Chicago Turtle Club will be on Sunday, April 28, 1:00 – 3:30 P.M., at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Ms. Kirsten Kranz will speak on "The Great Asin Turtle Rescue." Meetings are informal; questions, children and animals are welcome; parking is free. For more info call Lisa Koester, (773) 508-0034, or visit the CTC web site: http://www.geocities.com/~chicagoturtle.

CHS TO VISIT THE DETROIT ZOO

We're going to the zoo; you can come, too! The CHS has been invited to the Detroit Zoo on **Saturday, June 15, 2002**. This promises to be a very special tour of one of our finest reptile facilities. Andy Snider, curator of the Reptile House, will personally welcome us. He has promised us a behind-the-scenes tour of both the Reptile House and "Amphibiville" –home of the National Amphibian Conservation Center. In your spare time you may want to visit the zoo's new Arctic Ring of Life Exhibit. The fun begins the moment you board the luxury bus for this all-day trip; you (*and* your children, of course) will enjoy movies, games and snacks as you make your way across Michigan to an exciting afternoon. Space is limited, so mark your calendars and make your reservations. For more information (including the cost) call Bob Herman at (773) 667-4095, or E-mail him at bobherman1@aol.com. For a preview, you can visit <www.detroitzoo.org>.

THE ADVENTURES OF SPOT



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